

## Board monitoring, regulation and performance in the banking industry: evidence from the market for corporate control

Hagendorff, Jens; Collins, Michael; Keasey, Kevin

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**Board Monitoring, Regulation and Performance in the  
Banking Industry: Evidence from the Market for Corporate  
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**Board Monitoring, Regulation and Performance in the Banking Industry:  
Evidence from the Market for Corporate Control**

**Abstract**

**Manuscript Type:** Empirical

**Research Question/Issue:** The specific monitoring effect of boards of directors versus industry regulation is unclear. In this paper, we examine how the interaction between bank-level monitoring and regulatory regimes influences the announcement period returns of acquiring banks in the US and twelve European economies.

**Research Findings:** We study three board monitoring mechanisms (independence, CEO-chair duality and diversity) and analyze their effectiveness in preventing underperforming merger strategies under bank regulators of varying strictness. Only under strict banking regulation regimes, board independence and diversity improve acquisition performance. In less strict regulatory environments, corporate governance is virtually irrelevant in improving the performance outcomes of merger activities.

**Theoretical Implications:** Our results indicate a complementary role between monitoring by boards and bank regulation. This study is the first to report evidence consistent with complementarity by investigating the effectiveness (rather than the prevalence) of governance arrangements across regulatory regimes.

**Policy Implications:** Our work offers insights to policymakers charged with improving the quality of decision-making at financial institutions. Attempts to improve the ability of bank boards to critically assess managerial initiatives are most likely to be successful if internal governance is accompanied by strict industry regulation.

**Keywords:** Corporate Governance, Regulation, Banks, Mergers, Acquisitions, Performance

## Board Monitoring, Regulation and Performance in the Banking Industry: Evidence from the Market for Corporate Control

### INTRODUCTION

It is a widely-held view that banks and other closely-regulated firms are not subject to the same contracting costs between managers and shareholders as less tightly regulated companies (Booth et al., 2002; Kole and Lehn, 1999; Mallin et al., 2005). If regulation restricts managerial discretion and its scope to adversely affect shareholder wealth, the requirement on shareholders to put in place board mechanisms to monitor managers is somewhat reduced (Baysinger and Zardkoohi, 1986; Shleifer and Vishny, 1997). Thus, regulation may act as a substitute for monitoring by boards. Alternatively, if strict regulatory environments promote firm-level governance which is effective in controlling for agency cost, a complementary relationship exists between governance and regulation. The purpose of this paper is to analyze the monitoring effects of boards of directors versus bank regulators in preventing value-destroying acquisition strategies in the US and Europe. The regulatory regimes of Europe and the US vary in terms of their sensitivity to bank risk-taking, disciplinary powers and enforcement mechanisms.

Mergers and acquisitions (M&A) provide a suitable setting in which to examine the effectiveness of management monitoring. This is because M&A are important managerial initiatives that are subject to board scrutiny and have observable performance effects. Further, Jensen (1986) argues that acquisitions intensify the conflicts of interest between managers and shareholders in public corporations. Agency explanations of M&A emphasize that the market for corporate control may yield sizable personal gains to managers at the expense of shareholder wealth (Masulis et al., 2007; Morck et al., 1990). In the case of banking, a large merger performance literature reports that, while bidding bank shareholders tend to realize wealth losses as a result of M&A (DeLong and DeYoung, 2007; Pilloff, 1996; Van Hoose, 2009,

pgs 90 - 94), managers at the bidding bank benefit from higher prestige and increased remuneration packages in the post-merger period (Anderson et al., 2004; Bliss and Rosen, 2001).<sup>1</sup>

Our study comes against the background of the recent banking crisis and impending pressures to strengthen bank oversight by both regulators and shareholders. However, before changes to regulatory or firm-level arrangements can be made, it is critical to understand the relationship between governance and regulation.

In this paper, we employ three board monitoring mechanisms (board independence, CEO-chair duality and board diversity) and develop hypotheses which compare the substitution versus complementarity perspectives. We analyze the interaction of board monitoring with bank regulatory regimes to impact the bidder announcement effect. We find that two board monitoring mechanisms improve acquisition performance in strict regulatory regimes. Thus, board independence and diversity are linked to higher bidder announcement returns in strict regulatory regimes. In less strict regulatory environments, board monitoring is virtually irrelevant in improving the performance outcomes of merger activities.

The paper adds to the growing literature that examines whether corporate governance impacts on performance and makes several important contributions. First, we contrast the *effectiveness* of banks' internal monitoring capabilities across (country) regulatory regimes. In a recent working paper related to our paper, Becher and Frye (2009) also examine the relationship between governance and regulation. While Becher and Frye (2009) consider multiple industry regulatory regimes within a single nation, we compare governance arrangements within a single industry spread across multiple national regulatory regimes. Second, previous studies contrast the governance arrangements of regulated and unregulated industries without examining the performance effects of such arrangements. Our analysis, by contrast, gauges the realized performance changes linked to governance in the market for corporate control.

The paper is organized as follows. The next section introduces the theoretical background and develops three hypotheses which address whether regulation should be perceived as a substitute or a complement to board monitoring. This is followed by a discussion of the bank merger sample and the computation of the various variables we employ. We present some univariate analyses of the performance effects of M&A

and the governance of bidding banks in strict and less strict regulatory regimes. Next, the monitoring productivity and the regulatory environment are analyzed in a multivariate regression framework. We offer conclusions in the final section.

## THEORY AND HYPOTHESES DEVELOPMENT

Outside shareholders are incentivized to put in place monitoring devices which are effective in mitigating against agency costs (Jensen and Meckling, 1976; Shleifer and Vishny, 1997). However, for tightly-regulated firms, it has been suggested that regulators can perform subsidized monitoring and disciplinary services which lead to outcomes similar to those achieved by board monitoring (Baysinger and Zardkoohi, 1986; Demsetz and Lehn, 1985). Below, we develop three hypotheses which address the effectiveness of the following board monitoring variables within the bank regulatory environments of the US and Europe: board independence, CEO/chairman duality and board diversity.

More independent boards are believed to exert greater vigilance. Fama and Jensen (1983) argue that independent directors are incentivized to scrutinize diligently, because independent directors seek to protect their reputation as effective monitors of managerial discretion. As a result, more independent boards will exert greater disciplinary powers, for instance, by dismissing underperforming CEOs (Byrd and Hickman, 1992; Weisbach, 1988). Board independence will, therefore, increase general bank performance (Cornett et al., 2009) as well the performance of complex decision-making tasks such as bank merger strategies (Cornett et al., 2003; Subrahmanyam et al., 1997).

To the extent that regulators monitor bank management, the need for independent boards to monitor diligently and effectively is reduced. Admittedly, the interests of regulators are different from those of shareholders. In the banking industry, regulatory efforts are aimed at maintaining the safety and soundness of the financial system. Nonetheless, bank regulation restricts some of the strategic options available to managers which otherwise could have adverse effects on bank performance (see Demsetz and Lehn, 1985). In most countries, regulators have the authority to restrict the type of activities that banking firms

may engage in, require increases in regulatory capital, enforce reversals of high-risk policies, and veto takeover proposals. Further, regulators have disciplinary powers which help create an environment of accountability for managers (Hadlock et al., 2002). Prompt corrective action mandates give regulators powers which exceed those afforded to shareholders through voting rights in a number of countries. In strict regulatory environments, regulators may fine or dismiss bank directors without trial or hearing and require new board elections to be held. It could, therefore, be argued that if regulators effectively provide subsidized monitoring and discipline, independent boards are not required to monitor diligently and effectively. Therefore,

*Hypothesis 1a: If board monitoring and bank regulation are substitutes, board independence will not improve the bidder announcement returns under strict regulatory regimes.*

On the other hand, if a complementary relationship exists between corporate governance and regulation, more independent boards will be more effective under a stricter regulatory environment. Stricter bank regulation may exist along with more effective board independence due to the signaling effect embedded in strict regulation. Roe (2003) notes that it is the political will behind regulation (and not the design) which acts as the primary determinant of its effectiveness. Mahoney (2001) argues that regulation should not be understood as a narrow set of rules. Instead, governments employ regulation as a mechanism to signal intent about good practice and a commitment to enforce this practice. Therefore, it could be argued that even when regulators do not stipulate levels of board independence (or other governance arrangements), their presence will still coerce regulated firms into adopting effective governance structures (Becher and Frye, 2009). This is because directors of regulated firms wish to be perceived by regulators as managing their firm well and are mindful of the legal and reputational consequences which would result if regulators lost trust in them (Baxter, 2003). The stronger the mandate that regulators have been equipped with to intervene and discipline, the greater the ‘threat of action’ (Booth et al., 2002) that regulators pose to independent directors. Strict bank regulation, therefore, provides incentives to independent directors to monitor soundly and effectively. Consequently,

*Hypothesis 1b: If board monitoring and bank regulation are complements, board independence will improve the bidder announcement returns under strict regulatory regimes.*

Next to board independence, the leadership structure of a board may impact the quality of board decision-making. Fama and Jensen (1983) argue that separating the positions of chairman and CEO (such as to charge the latter with the running of the company and the former with the running of the board) prevents boards from being unduly influenced by a single person. The underlying rationale is that CEO-chairman duality is likely to lead to a concentration of power which impairs effective board monitoring. When the board leadership structure is separated, by contrast, managerial initiatives will be subject to greater scrutiny, resulting in a higher likelihood of disciplinary action against underperforming CEOs (Goyal and Park, 2002) and improved firm performance (Baliga et al., 1996; Rechner and Dalton, 1991). Consistent with this, Masulis et al. (2007) note that bidding boards are in a better position to scrutinize complex merger proposals when the positions of CEO and chairman of the board are separated.

Similar to the arguments presented for Hypothesis 1, we propose two contrasting hypotheses regarding the interaction between board size and bank regulation. If strict regulation can be understood as providing monitoring and disciplinary services not unlike those provided by board monitoring, strict regulation will act as a disincentive for effective monitoring under a separated board leadership structure. Therefore, we would not expect to see increases in merger performance if the roles of CEO and chairman are separated under a strict bank regulatory regime. By contrast, stricter regulation may help lower agency costs when powerful regulators signal intent to intervene and enforce. If this is the case, stricter bank regulation will increase the monitoring productivity of a separated board leadership structure.

*Hypothesis 2a: If board monitoring and regulation are substitutes, separating the roles of CEO and chairman will not improve the bidder announcement returns under strict regulatory regimes.*

*Hypothesis 2b: If board monitoring and regulation are complements, separating the roles of CEO and chairman will improve the bidder announcement returns under strict regulatory regimes.*

Finally, the diversity of the board of directors may also improve its monitoring effectiveness. Organizational scholars argue that diverse groups, through interaction between the various group



members, produce a variety of different perspectives that will ultimately improve the quality of decision-making (Richard, 2000). Consequently, diversity will stimulate board activism and more diligent monitoring (Ely and Thomas, 2001). The ability of diverse boards to reduce agency costs should, therefore, create value for shareholders (Carter et al., 2007) and lead to general improvements in corporate performance (Erhardt et al., 2003; Farrell and Hersch, 2005; Shrader et al., 1997). The enhanced cognitive abilities and activist nature of diverse boards suggests that diverse boards are also associated with improved M&A performance (see Hagendorff et al., 2007).

As previously, we argue that if bank regulators offer subsidized monitoring services, diverse boards are not pressured to monitor diligently under strict regulatory regimes. By contrast, if stricter bank regulation can be understood as a signal which conveys a threat of action in the event of managerial or monitoring failures, this will encourage effective monitoring by diverse boards under strict bank regulatory regimes. Our final set of hypotheses, thus, is:

- Hypothesis 3a: If board monitoring and regulation are substitutes, board diversity will not improve the bidder announcement returns under strict regulatory regimes.*
- Hypothesis 3b: If board monitoring and regulation are complements, board diversity will improve the bidder announcement returns under strict regulatory regimes.*

DATA AND VARIABLES

M&A Sample

The sample of bank M&A on which we base our analysis was obtained from the Securities Data Corporation’s (SDC) Mergers & Acquisitions Database. Sampled mergers were announced and completed between 1996 and 2004 and involved acquirers and targets that are both listed in the US or Europe (i.e. Belgium, Denmark, France, Germany, Greece, Italy, Netherlands, Portugal, Spain, Sweden, Switzerland, and the UK).

Further, we imposed the sampling criteria that deals are majority bank acquisitions (that led to acquirers owning at least 50% of the target's equity) which are valued at more than \$100 million (expressed in inflation-adjusted 2004 US\$ terms) and that there are more than 100 trading days between separate merger announcements by the same bidder. Further, sample banks are commercial banks and BHCs with share price data on Datastream. Finally, target banks are not a failing institution as indicated by the SDC database (a failing institution as a target could mean that the deal is involuntary).

The resulting dataset of bank M&A is described in Table 1. With 151 out of 204 sample transactions, US banks make the largest contribution to our sample. This is an accurate reflection of the relative pace of bank merger activity in Europe and the US. It is important to bear in mind that a number of European economies have less developed capital markets than the US and, consequently, fewer listed banks which engage in M&A. As a result, the consolidation of bank assets in countries such as Germany, France and Italy over the period of study has largely involved non-listed public sector and cooperative institutions (see Berglöf et al., 2005) for which market data are not available. We test whether the results we report in this paper are sensitive to the inclusion of US data in the Robustness Section and find that the overall results are invariant to the exclusion of the US from our sample.

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Insert Table 1 about here  
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### Dependent Variable

Our main dependent variable is the bidder announcement effect. In an efficient capital market where assets are priced rationally, changes in the bidder's market valuation around acquisition announcements provide an accurate assessment of the net benefits accruing to bidders following the completion of a deal.

We calculate the bidder announcement effect by adding cumulative abnormal returns over an event window of  $(t-2, t+2)$  with 0 as the announcement date supplied by SDC Platinum. We estimate market model parameters using 100-day daily return observations starting from 121 days to 21 days before the

acquisition announcement. Share price data and national bank-sector indices are from Datastream. We follow Dodd and Warner (1983) and standardize abnormal returns by their estimation period variance:

$$SAR_{it} = AR_{it} / \left[ \hat{\sigma}_i \sqrt{1 + \frac{1}{T_i} + \frac{(R_{mt} - \bar{R}_m)^2}{\sum_{t=1}^{T_i} (R_{mt} - \bar{R}_m)^2}} \right], \tag{1}$$

where:

- $SAR$  = standardized abnormal returns (AR)
- $\hat{\sigma}_i$  = estimation period variance of AR
- $T$  = number of days (100) in the estimation period
- $R_{mt}$  = return of the bidding bank
- $\bar{R}_m$  = average return on the market index

We then use the abnormal return statistics as reported in Boehmer et al. (1991) to correct for increases in the variance of abnormal returns around merger announcements.

**Board Monitoring Variables**

In order to test our three hypotheses relating to how board monitoring interacts with the regulatory regime, we collect data on board independence, CEO/chairman duality, and different measures of board diversity. Board data for US banks are from proxy statements filed with the Securities and Exchange Commission (SEC). For European bidders, governance data were extracted from annual reports and other company publications such as corporate governance reports and press releases. We obtain the last filing or publication before a deal was announced.

*Board independence* (Hypothesis 1) is the number of independent board directors divided by board size. Directors are classified as independent if they are not employees, former employees, or relatives of employees (see Hermalin and Weisbach, 2003).<sup>2</sup> *CEO / chair duality* (Hypothesis 2) is a dummy variable which takes the value 1 if the CEO of the bidding bank is also the chairman of the board (and zero otherwise).

We use different variables to capture the diversity of the acquiring bank's board (Hypothesis 3). We measure *occupational diversity* as in Hillman et al. (2000) by classifying directors as insiders, outside business experts, support specialists (e.g. law and accounting experts), or community leaders (e.g. politicians, clergy, academics). We then use these classifications to compute a Herfindahl-type index (which increases with the level of diversity across a board) as  $1 - \sum p_i^2$ , where  $p$  is the proportion of group members in  $i$  different categories. *Age, tenure* and *expertise diversity* are calculated by dividing the mean by the standard deviation of director characteristics. We measure age and tenure in years and expertise as the number of outside directorships held by directors.

### Regulatory Strictness

We measure the overall *strictness of regulatory environments* using a database compiled by Barth et al. (2001). The regulatory data refer to the time period 1998 – 2000 and have been widely used in empirical research (see Buch and DeLong, 2008; Laeven and Levine, 2007). We employ the data to build an index as suggested in Buch and DeLong (2008) which focuses on three regulatory aspects which are relevant to our investigation: the extent to which the regulatory environment is sensitive to bank risk-taking, the breadth of disciplinary powers available to regulators, and how well these powers are enforced. The index ranges between 0 and 12 to reflect the inclusion of twelve indicators (see Table 3 for a complete list). Higher scores are assigned to banking sectors with stricter regulatory environments. Table 2 shows that the strength of regulatory regimes in Europe varies greatly between the UK and Belgium (both with scores of 9) and countries such as Sweden which scores as low as 3.<sup>3</sup>

The variation in the level of regulatory strictness shows that despite recent efforts to harmonize regulatory practices—most notably in the European Union, but also to a lesser degree at an international level—differences in the regulation of banking systems across developed countries persist. With regards to merger activities, such differences have meant, for example, that banks in the US have not been permitted to diversify into non-depository activities. While most of these restrictions were repealed by the Gramm-Leach-Bliley Act in 1999, US banks still face some restrictions over their potential acquisition

targets. For example, banks are not allowed to take stakes in non-financial firms, and acquisitions of more than 25% of a target's equity require regulatory approval. Banks in Europe, on the other hand, have enjoyed a more lenient regime as reflected in the prevalence of the universal banking model in many European economies.

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Insert Table 2 about here  
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**Control Variables**

We collect additional board and director data to ensure our results are robust to other factors which may impact the quality of decision-making on bank boards in the context of M&A. *Board size* is the number of directors elected to the board. Jensen (1993) argues that larger boards hinder communication, coordination and, ultimately, the decision-making capabilities of the board. Further, larger boards create environments in which CEOs are less likely to face challenges to their initiatives and in which they can exert greater managerial power (Yermack, 1996). We expect smaller boards to be associated with better performing M&A, because smaller boards are less likely to be driven by a non-value maximizing agenda (Eisenberg et al., 1998) and are more effective when scrutinizing the performance effects of bank mergers (Cornett et al., 2003).

Both *CEO age* and *CEO tenure* capture the level of expertise accumulated by the top executive regarding the organizational as well as the wider economic environment of a bank. Kosnik (1990) finds that older CEOs engage less frequently in greenmail transactions (where CEOs privately repurchase equity from dissident shareholders at a premium). For the US banking industry, Cornett et al. (2003) show that CEO age is positively and significantly related to the announcement period returns that bidding banks realize. We, therefore, expect that longer-tenured and older CEOs (both measured in years) are less likely to harm shareholders' interests.

Are busy boards more effective monitors? If boards meet more frequently, and directors interact more often, board vigilance is likely to increase which may lead to fewer value-destroying acquisitions as a

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3 result. Vafeas (1999) and Fich and Shivdasani (2006) find a negative association between the number of  
4 board meetings and corporate valuations for non-financial firms in the US. However, the results do not  
5 permit conclusions regarding the direction of causality. Adams and Mehran (2005) examine whether  
6 active boards increase the market valuations of banks, but cannot find any evidence consistent with this.  
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8 We measure *board activity* as the number of board meetings (including extraordinary meetings) in the  
9 fiscal year before the deal announcement.  
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16 Previous research has also indicated a number of factors unrelated to governance or regulation which  
17 have an impact on the performance of bank acquisitions. Among the deal characteristics shaping merger  
18 performance are *merger finance* (a binary variable which equals to one if a deal is completely cash-  
19 financed, and zero otherwise), *product diversification* (a binary variable which is equal to one if first two  
20 digits of the four-digit SIC code are not identical, and zero otherwise),<sup>4</sup> *deal value* (million US dollars in  
21 2004 terms) and *target profitability* (measured by earnings per share). Both smaller and more profitable  
22 targets may make it easier for an acquirer to create value via M&A. We control for merger finance and  
23 diversification because both non-cash finance and financial diversification may be driven by non-value  
24 maximizing agendas and may, hence, be associated with underperformance (Beitel et al., 2004; DeLong,  
25 2001). This is because a high share of non-cash finance may signal lower levels of commitment to a deal  
26 by a bidder (Shleifer and Vishny, 2003) and diversification may be motivated by a managerial desire to  
27 smooth company earnings over time (Morck et al., 1990).  
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42 We also include a variable called *investor protection* which is an index of shareholder rights multiplied  
43 by an index of the rule of law (both taken from La Porta et al. (1998)) to capture a range of institutional  
44 differences across countries. More sophisticated investor protection regimes have been linked to improved  
45 stock market development (La Porta et al., 2000), lower private benefits of control (Dyck and Zingales,  
46 2004), and more active takeover markets (Rossi and Volpin, 2004). In short, the investor protection  
47 variable proxies for the extent to which market-based forms of corporate governance prevail in an  
48 economy which may impact upon the market reaction to M&A in these environments.  
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Table 3 presents correlations between the various variables. Generally, the correlations between the variables are low. There is a negative relationship between board size and board independence ( $p<.05$ ). This is consistent with explanations of excess managerial power which stress that larger boards tend to be less independent as they are more likely to be under the control of the CEO (Eisenberg et al., 1998; Yermack, 1996). Also, the correlation table shows that smaller boards meet more often ( $p<.05$ ).

## EMPIRICAL ANALYSIS

### Market Reaction to Merger Announcements

Table 4 reports economically and statistically significant wealth losses for bidding bank shareholders around the announcement of M&A. For US deals, mean CAR[-2, 2] is -0.47% ( $t=-10.17$ ,  $p<.001$ ). Announcement returns remain negative and statistically significant for each subset of deals. For the European subsample, there is no evidence consistent with bidding banks benefiting from M&A. Average announcement returns are not statistically different from zero. The only subsample to create value is the all-cash subsample of deals which do not involve the bidder's equity as a transaction currency. Shleifer and Vishny (2003) argue that cash insulates bidding bank shareholders from managerial opportunism by signaling greater commitment to an acquisition target than deals funded by acquirers' potentially overvalued equity.

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Insert Table 4 about here  
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The wealth losses that bidding bank shareholders realize in the market for corporate control are in line with what previous studies report (see for example, DeLong and DeYoung, 2007; Pilloff, 1996). Shareholder wealth losses in the context of M&A point to conflicting interests between managers and

shareholders which at least in part could be resolved by effective monitoring provided by the board of directors (Masulis et al., 2007).

### Board Monitoring and the Regulatory Environment

Next, we examine the relationship between management monitoring and corporate governance under different regulatory regimes. Table 5 ranks the sample by the strictness of the regulatory regime and reports board attributes for the resulting portfolios. We use Buch and DeLong's (2008) index of regulatory strictness (denoted by  $r$ ) which varies between 3 and 9 for our sample to distinguish between low ( $3 \leq r \leq 4$ ), medium ( $5 \leq r \leq 7$ ) and high strength ( $8 \leq r \leq 9$ ) regulatory environments. We find that several standards of effective board monitoring are more prevalent in stricter regulatory environments. For example, board independence increases incrementally with the strictness of bidding bank regulation from 65% (low) to 71% (medium) and 80% (high strength) (for differences between the low and high group:  $t=-6.27$ ,  $p<.001$ ;  $z=-4.92$ ,  $p<.001$ ). This is along the lines of Booth et al. (2002) and Adams and Mehran (2003) who report that regulated industries exhibit more independent boards. Also, most of the diversity measures are higher under a strict regulatory regime for differences in expertise diversity between the low and the high-strength portfolios).

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Insert Table 5 about here  
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Board monitoring duplicates similar-type efforts by bank regulators which are aimed at monitoring and disciplining managers. Therefore, the prevalence of a number of governance mechanisms which are commonly associated with enhanced board monitoring in strict regulatory environments is inconsistent with board monitoring and regulation acting as substitutes and, instead, points to a complementary role between the two. This confirms the findings of previous studies which compare the board mechanisms of regulated and non-regulated firms (Becher and Frye, 2009, Booth et al., 2002). However, the main contribution of the present study is that we focus on the *effectiveness* of board arrangements under



different regulatory regimes (rather than their prevalence). The next section, therefore, assesses the implications of firm-level governance on the realized bidder announcement effect of M&A.

**Regression Results: Board Monitoring and Regulation**

To assess the productivity of board monitoring in Europe and the US and its implications for the relationship between governance and regulation, we estimate the effects of board governance on the bidder announcement effect of M&A (CAR[-2; +2]) in different regulatory environments. Table 6 regresses board governance data as well as control variables on the stock market reaction (CAR[-2, 2]) around bank merger announcements. We distinguish between bidding banks domiciled in countries with a Buch and DeLong (2008) score below 9 (less strict regulatory environment; Regressions 1 to 3) and banks domiciled in environments with a score of 9 (strict environment; Regressions 4 to 6).<sup>5</sup>

Table 6 shows systematic differences in the effectiveness of board monitoring under stricter and less strict bank regulatory regimes. Regression 1 reports that under less strict bank regulatory regimes board monitoring is irrelevant in affecting merger announcement returns. None of the coefficients on the board variables enter the regression specification with a statistically significant sign. This is inconsistent with board monitoring and regulation acting as substitutes. We, therefore, reject Hypotheses 1a, 2a and 3a. To preserve degrees of freedom, we add control variables sequentially in Regressions 2 and 3. Amongst the controls, the cash finance variable enters the regressions with a positive sign ( $p<.05$ ). Also, deal value enters the model with a negative sign ( $p<.05$ ) indicating that smaller deals, presumably, because their integration into the context of the acquiring firm will be less costly, receive a more positive market reaction. Despite the small number of observations for the low regulatory strictness subsample, there is a very high degree of overlap between the signs and magnitude of the estimated variables across regression specifications. This lends support to the robustness of our finding that board monitoring has only a negligible role to play in preventing value-destroying acquisition strategies in less strict regulatory environment.

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Insert Table 6 about here  
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The results for high-strength regulators (Regressions 3 to 6), by contrast, show that a number of board characteristics are related to bidding bank returns. For instance, the coefficient on board independence has a positive and significant sign (Model 4, coefficient=.63,  $p<.05$ ; Model 5, coefficient=.65,  $p<.05$ ; Model 6, coefficient=.57,  $p<.05$ ). This offers support for Hypothesis 1b that board independence is a complement to bank regulation when improving the performance of M&A. Consequently, boards with a higher share of independent directors inspire investor confidence in the value-creating potential of a deal under a strict regulatory regime, but not under less strict regulatory environments.

Further, occupational diversity improves the expected gains from acquisitions under a strict regulatory environment which is consistent with Hypothesis 3b (Model 4, coefficient=1.37,  $p<.05$ ; Model 5, coefficient=1.25,  $p<.05$ ; Model 6, coefficient=1.19,  $p<.05$ ). Consequently, board diversity and bank regulation act as complements. Apparently, boards whose members come from a wider range of occupational backgrounds are, therefore, likely to be more critical of managerial initiatives under a strict regulatory regime.

Among the control variables which are significant is the log transformation of CEO age which has a positive and significant sign ( $p<.05$ ). Consequently, expectations about merger-related gains following a deal are greater if directors are older, and presumably, more experienced. Finally, the cash finance variable exerts a statistically significant impact on announcement returns ( $p<.05$ ), while the investor protection variable has the conjectured positive sign (though it is not significant at customary levels).

The results offer support for two out of the three hypotheses we developed above. The fact that board independence and occupational diversity are effective in improving the expected returns of bank mergers under strict regulatory regimes is consistent with Hypotheses 1b and 3b. By contrast, we do not find that CEO-chair duality (Hypothesis 2) affects the expected returns from M&A. One explanation for this could be that because our model examines the simultaneous effectiveness of various governance mechanisms,

we are unable to analyze possible trade-offs in the effectiveness of individual governance devices. For example, more independent boards may be less likely to require CEO-chair duality to bring about better performing M&A than less independent boards. While a detailed analysis of the relationships between individual governance devices goes beyond the scope of this paper, it may be possible that individual governance devices act as substitutes for each other.

We argue that, collectively and in general, our results back the notion that governance acts as a complement to stricter regulation. This is because under less strict regulatory regimes not a single of the board monitoring mechanisms examined in Table 7 enters the regression with a coefficient that is statistically significant at customary levels. By contrast, board governance affects the expected outcomes from bank mergers in strict regulatory environments.

We also test whether similar empirical relationships between bidding bank boards and performance exist in the market for corporate control when we examine long-term operating performance (rather than acquirer returns at the time of the bank merger announcement). Following Healy et al. (1992) and Cornett et al. (2006), we measure performance changes as pre-tax operating cash flows (measured as income before taxes and extraordinary items plus interest expenses on debt) divided by the book value of assets. We refer to this measure as OPCFROA.<sup>6</sup> We compute performance changes between one year before and three years after the completion of a deal and adjust performance data using an asset-weighted index of all listed banks available on Datastream in the bidding bank’s country. Consequently, OPCFROA gauges changes in recorded performance net of industry or economy-wide phenomena.

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Insert Table 7 about here  
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Table 7 reports regressions of our board characteristics on market-adjusted changes in OPCFROA between years -1 and+3 relative to the completion of a merger. As previously, we distinguish between strict ( $r=9$ ) and less strict ( $r<9$ ) regulatory regimes. While the results show some small differences to the regressions in Table 6 (for instance the results support Hypothesis 3b, but not Hypothesis 1b), it is

important to bear in mind that, owing to the unavailability of some accounting items over the longer examination period, these regression are based on a much smaller subsample. Overall, the findings in Table 7 are broadly in line with the results we report regarding the market reaction to bank merger announcements in Table 6. Thus, board monitoring is practically irrelevant in determining the long-term performance of bank mergers in lenient regulatory environments (Regressions 1 to 3), while a number of board characteristics (notably, board diversity) impact post-merger performance changes under a more strict bank regulatory regime. Thus, the regressions on long-term performance confirm that the complementarity view by showing that board governance is associated with measurable performance improvements only under a strict bank regulatory regime.

## ROBUSTNESS

The virtual absence of any effects of board characteristics on M&A performance in less strict regulatory environments raises the question whether alternative governance mechanisms that we have not controlled for in our analysis drive the reported results. For example, product market competition is an important monitoring mechanism (Masulis et al., 2007; Roe, 2003; Shleifer and Vishny, 1997). With the exception of Germany and, perhaps, Italy, less strict bank regulatory environments have very concentrated markets for banking services. Consequently, it is conceivable that, in the face of increased competitive forces, banks domiciled in these environments choose their governance optimally such that more vigilant boards have no marginal effect on merger outcomes. To test this, we calculate a Herfindahl index (sum of squares of banks' market shares available on Worldscope, based on total assets) for each country and run the regressions in Table 6 and 7 separately for the high and low market concentration terciles. We are unable to detect statistically meaningful differences in the monitoring effectiveness of board variables between the resulting portfolios. Consequently, it would seem that the results we report are not driven by cross-country differences in market concentration levels.

Due to the prevalence of merger activity in the US vis-à-vis Europe, US banks make a large contribution to our sample. To ensure that our results are not driven by the large share of US deals, we perform the univariate tests in Table 5 for the European subsample. We divide European deals according to whether the regulatory score in the bidder's country is above or below the mean value for this subgroup. We observe qualitatively identical results to those reported in Table 5. We, therefore, conclude that our results are not driven by US acquisitions.

Do the reported results hold over time? Following the passing of the Gramm-Leach Bliley (GLBA) Act in 1999, one of the differences in bank regulation between Europe and the US—the activities that banking firms are permitted to engage in—has become less pronounced. Consequently, it may be the case that results are weaker for the period that follows the deregulation of banking activities in the US. Consequently, the regressions in Table 6 and 7 are run separately for US bank mergers completed before 2000 (pre-GLB) and afterwards (post-GLB). However, there are only marginal differences between the regression results in separate time periods and results for the complete sample period.

Serial acquisitions form a sizable share of M&A activities in the banking industry. For transactions that are part of a merger program, there may be an anticipation effect that potentially depresses the announcement returns that serial acquirers earn vis-à-vis first-time bidders (see Song and Walkling, 2006). Further, the long-term performance effects of frequent acquirers may also be different from single acquirers. To try to account for this, we add a binary variable (zero for first bids and one for second or higher order bids) to the regressions on CAR[-2,2] and industry-adjusted OPCFROA. However, the merger program dummy does not enter the regressions at customary significance levels indicating that serial acquirers do not have different performance implications.

**CONCLUDING REMARKS**

In this paper, we analyze the interaction between monitoring by bank boards and regulatory regimes in the takeover market. Using a sample of 204 US and European bidding banks, we test the effectiveness of three

board monitoring mechanisms (board independence, CEO-chair duality, and board diversity) in affecting the announcement returns of bank M&A across bank regulatory environments of varying strictness. We find that in strict regulatory regimes board independence and board diversity are effective in improving the returns of bidding banks. Given that strict bank regulators provide monitoring and disciplinary services which are similar to those provided by board monitoring, our finding that strict regulation facilitates effective board monitoring is not consistent with the notion that regulation and firm governance are substitutes. Instead, our results point to a complementary relationship between regulation and some governance mechanisms.

Our work supports earlier studies which view board monitoring and industry regulation as complements (Baxter, 2003; Becher and Frye, 2009) and have implications for theoretical work in this area in two ways. First, previous empirical work has interpreted the existence of enhanced monitoring arrangements (e.g. more independent boards) in stricter regulatory regimes as support for the complementarity hypothesis. However, the extant work makes no reference to the realized performance implications of these arrangements. By contrast, we show that interactions between regulation and board monitoring lead to more *effective* governance arrangements in regulated firms. We, therefore, advance existing theory in this area by showing that board monitoring arrangements are associated with measurable shareholder wealth gains in strict regulatory regimes (rather than the presence of indicators of better monitoring). Second, theoretical arguments have so far stressed that regulation per se could exert strong signaling effects (Baxter, 2003; Booth et al., 2002). Since our study compares the effectiveness of regulation across multiple regulatory regimes, we are able to show that regulation improves the effectiveness of board monitoring only for the strictest regulatory regimes in our sample.

Further, this study enhances our understanding of differences in the effectiveness of governance systems across countries. Extant research is heavily skewed towards the US. In particular, previous work which has established a link between board monitoring and bank performance in the market for corporate control (e.g., Becher and Campbell, 2004; Cornett et al., 2003; Subrahmanyam et al., 1997) is based on a US market and regulatory context. Our findings suggest that, for banking studies at least, the results of

these studies may have been partly shaped by strict US bank regulation and may, therefore, not be applicable to institutional contexts with less strict regulators. In that sense, our findings emphasize the need for future research to examine the effectiveness of governance devices outside the US.

Our paper is not without shortcomings. First, we infer the intensity of board monitoring from the composition of the board. For instance, we assume that monitoring intensity increases with the share of independent directors on the board. While this assumption is a cornerstone of the corporate governance literature in economics and finance, it is important to point out that our approach does not directly study board monitoring or the processes which underlie it. Future research should, therefore, go beyond linking board structure to performance and consider process variables which explain the dynamics that lead to board characteristics having a beneficial effect on corporate performance under different regulatory regimes. Second, board characteristics are examined at the BHC-level and not at the level of individual subsidiaries for which governance data tend to be less readily available. Therefore, it is possible that variables such as board activity understate the true level of interaction between bank directors. Finally, this study is a single-industry study. It could be argued that banking firms enjoy a special, if not unique, position due to the large negative externalities associated with their failure and the access to public funds which results from this. The degree to which regulatory practices affect and complement board monitoring could, therefore, be particularly large for banking firms and our results may not be generalizable to other tightly-regulated industries (such as some utilities as well as gas and oil extracting companies). However, given that regulators in other regulated industries also provide monitoring services and exert disciplinary powers on management, we expect our results to hold for other regulated firms as well. However, this is an empirical question for future research to examine.

A further avenue for future research is to revisit the question of substitution versus complementarity while also considering the relationships among individual governance devices in the presence of regulatory regimes of varying strictness. As well as the interaction between governance and regulation, the interactions among individual governance variables should be examined further. For example, boards which are more independent may not rely on other governance mechanisms such as CEO-chair duality in

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3 order to improve merger performance. Clearly, interactions between governance mechanisms are likely to  
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5 exist.  
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8 This paper comes against the background of the failure of financial institutions in the US, Europe and  
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10 elsewhere and debates among policymakers as regards the future of both bank regulation and bank  
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12 governance. For example, a number of countries are contemplating to restrict the activities that banks may  
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14 engage in or to introduce formal qualifications for the members of bank boards. However, an important  
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16 practical implication of our work is that regulation and governance should not be viewed in isolation.  
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18 Attempts to raise a board's ability to critically assess managerial risk-taking are more likely to be  
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20 successful if effective bank-level governance is accompanied by strict industry regulation. Any role of  
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22 government (via bank regulation) in reducing agency costs is only likely to be successful when  
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24 governments signal their intent to interfere and enforce by giving powerful mandates to bank regulators.  
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26 Half-measured attempts to increase the strictness of bank regulation are, thus, unlikely to improve the  
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28 effectiveness of bank-level monitoring. In the same vein, for investors and practitioners, our results  
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30 highlight that legislation which increases board power will equally be unlikely to be effective in bringing  
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32 about performance gains if corporate governance arrangements at the firm-level are not supported by a  
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ENDNOTES

- <sup>1</sup> Hagendorff et al. (2007) provide a review of the corporate governance literature and how it can be applied to explain underperforming bank mergers.
- <sup>2</sup> In the banking industry, director independence may be impaired by the presence of loan relationships between outside directors and banks. Due to the unavailability of such data for most countries, our measure of independence does not take loan relationships between banks and insiders into account. In the US, Regulation O of the Federal Reserve Board stipulates that credit extensions to insiders must be disclosed if they, in aggregate, equal or exceed \$500,000 or 5% of bank’s capital, whichever is less.
- <sup>3</sup> While financial supervision in Sweden scores highly as regards transparency rules, Sweden exhibits the least strictest regulatory environment in the sample due to the absence of a rule-based framework for intervention (e.g. following a decline in capital adequacy) as well as the inability of regulators to supersede shareholder rights (e.g. by ordering dividend cuts).
- <sup>4</sup> We follow Campa and Hernando (2004) and classify deals as diversifying if the first two digits of the SIC code of the main industry of the institutions involved in a deal are not identical. Admittedly, SIC codes may not always convey an accurate picture of the activities of financial firms (see DeLong, 2001). Hence, we used a second measure of diversification that may be more suitable to account for the nature of some of the banks as integrated financial firms with more than one SIC code. We follow Sirower (1997) and examine the number of industry classification codes shared between bidders and targets. The results based on this diversification measure, which only classifies deals as diversifying if bidders and targets do not share any SIC codes, are virtually identical to the results reported in this section.
- <sup>5</sup> The univariate tests distinguish between low-, median-, and high-strength regulatory environments. For the regression analysis, we choose a slightly different cut-off point than in the univariate tests by comparing strict ( $r=10$ ) with less strict ( $r<9$ ) environments. This is motivated by a desire to retain a sufficiently large subsample of deals completed in less strict regulatory environments in order to perform meaningful regression analyses. When we define ‘less strict regulation’ as  $r \leq 4$ , the results for Regression (1) (which are based on a subsample of 16 observations) are qualitatively identical to those reported in Table 6. We, therefore, conclude that the results in Table 6 are invariant to changes in the cut-off point to distinguish between strict and less strict regulatory environments.
- <sup>6</sup> Long-run performance changes may also be measured on the basis of market returns. However, there are a number of methodological difficulties associated with this method (Barber and Lyon, 1997; Fama,

1998) which are especially severe in multi-country settings when equity markets differ in terms of their sensitivity to news. Further, the use of OPCFROA has three distinct advantages. First, it captures realized gains from M&A rather than expected gains as evident in market returns. Second, unlike standard profitability measures, OPCFROA is not sensitive to the method of deal finance (debt finance means lower post-merger profitability), while controlling for interest payments to depositors. Third, OPCFROA is a more precise measure of performance changes than Tobin's  $q$  which is routinely used in corporate governance research. Since Tobin's  $q$  controls for market valuation, it partly reflects a company's growth opportunities. This could be problematic since poorly-performing firms may deliver above-market returns to shareholders if, for example, there is market speculation of an imminent takeover approach (see Cornett et al., 2006).

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Table 1 Sample Overview

By Bidder Country			By Announcement Year		
Country	N	Percentage	Year	N	Percentage
Belgium	6	2.94	1996	11	5.39
Denmark	2	0.98	1997	30	14.71
France	6	2.94	1998	32	15.69
Germany	2	0.98	1999	27	13.24
Greece	7	3.43	2000	29	14.22
Italy	6	2.94	2001	28	13.73
Netherlands	5	2.45	2002	14	6.86
Portugal	2	0.98	2003	17	8.33
Spain	4	1.96	2004	16	7.84
Sweden	1	0.49			
Switzerland	3	1.47			
United Kingdom	9	4.41			
United States	151	74.02			
Total	204	100.00	Total	204	100.00

**Table 2 Bank Regulatory Index**

The country index is computed to reflect the inclusion of twelve indicators (yes=1; 0=no). Source: Buch and Delong (2008).

**Panel A: Composition**

- (1) Must banks disclose risk management procedures to the public?
- (2) Are risk-weights in line with Basel guidelines?
- (3) Does the capital–asset ratio vary with a bank’s credit risk?
- (4) Does the capital–asset ratio vary with market risk?
- (5) Is there a formal definition of ‘non-performing loan’?
- (6) Are there any mechanisms whose infraction leads to automatic imposition of sanctions on banks directors and managers?
- (7) Can the regulatory agency order directors/management to constitute provisions to cover actual/potential losses?
- (8) Can the regulatory agency suspend a director’s decision to distribute dividends, bonuses, or management fees?
- (9) Have any such actions been taken in the past 5 years?
- (10) Can the regulatory agency supersede bank shareholder rights and declare a bank insolvent?
- (11) Does banking law allow the regulatory agency to suspend some or all ownership rights of a problem bank?
- (12) Can the regulatory agency or any other government agency take measures aimed at bank restructuring and reorganization?

**Panel B: Country Scores**

Country	Regulation
Belgium	9
Denmark	6
France	4
Germany	4
Greece	4
Italy	5
Netherlands	5
Portugal	6
Spain	7
Sweden	3
Switzerland	7
United Kingdom	9
<i>average</i>	5.75
United States	9



Table 3 Correlations and Summary Statistics

	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) CAR[-2; +2] (%)	-0.47	1.01														
(2) Board independence	0.78	0.22	<b>.11</b>													
(3) Log(board size) <sup>a</sup>	15.53	0.31	-.01	<b>-.16</b>												
(4) Chair / CEO duality	0.42	0.49	.09	<b>-.20</b>	.09											
(5) Occupational diversity	0.53	0.12	<b>.15</b>	.08	-.08	-.03										
(6) Age diversity	8.42	2.16	.13	.07	.01	-.08	-.18									
(7) Expertise diversity	0.83	1.14	.04	-.07	.18	.02	-.15	.18								
(8) Log(CEO age) <sup>a</sup>	55.13	0.09	.16	.00	.00	-.15	-.05	<b>.33</b>	.06							
(9) Log(CEO tenure) <sup>a</sup>	10.23	0.85	-.10	.17	-.09	-.30	.14	.11	-.11	.18						
(10) Log(board activity) <sup>a</sup>	9.04	3.18	-.06	.12	<b>-.18</b>	.07	.09	-.01	-.19	-.21	.02					
(11) Cash finance	0.22	0.42	<b>.21</b>	-.07	.05	.15	-.08	-.06	.27	.02	-.13	-.05				
(12) Product focus dummy	0.80	0.40	-.14	.02	-.11	-.16	-.10	.01	-.22	.02	.12	.10	<b>-.21</b>			
(13) Log(deal value) <sup>a</sup>	3,359.68	9,575.49	.03	-.14	.15	.16	-.20	.06	.12	-.03	-.23	.02	-.09	-.11		
(14) Target profitability	2.25	4.74	-.06	-.03	.18	.11	.01	-.09	.22	-.11	-.22	-.18	-.03	-.21	.20	
(15) Investor protection	43.22	14.23	<b>-.22</b>	.27	-.19	<b>-.23</b>	.11	.11	-.16	.17	.28	-.10	-.23	.18	-.24	<b>-.24</b>

The table presents pairwise correlation coefficients between variables. Bold coefficients indicate statistical significant at 5%. Definitions of board variables are in Table 2. The cash finance dummy equals one if the transaction is completely cash-financed (and zero otherwise) and the product focus dummy equals one if the first two digits of the four-digit SIC code between bidder and target are identical (zero otherwise). Deal values are in millions of 2004-USD and the profitability of the target is measured as earnings per share (EPS) in the year before a deal was announced. Investor protection is an index of anti-director rights multiplied by an index of the quality of law enforcement (both from La Porta et al., 1998).

<sup>a</sup> summary statistics are not based on logarithmic transformations

**Table 4 Bidder Announcement Returns, CAR[-2, 2]**

The sample consists of completed bank mergers between 1996 and 2004 in Europe and the US. Cumulative announcement returns (CAR) are based on standardized market model abnormal returns and are calculated against value-weighted bank sector indexes available on Datastream. Deals are classified all-cash if financed by 100% cash. Cross-border deals involve bidders and targets in different countries. The statistical significance of mean abnormal returns is determined using a one-sample *t*-test.

Whole sample		All-cash		Some Stock		Domestic M&A		Cross-border M&A	
Mean	<i>t</i> -Stat	Mean	<i>t</i> -Stat	Mean	<i>t</i> -Stat	Mean	<i>t</i> -Stat	Mean	<i>t</i> -Stat
Panel A: US deals									
-0.47%	(-10.17)***	-0.27%	(-5.28)***	-0.49%	(-12.65)***	-0.47%	(-10.17)***	n.a.	
<i>N</i>	151	19		132		151			
Panel B: European deals									
-0.08%	(-3.12)**	0.32%	(6.23)***	-0.15%	(-8.67)***	-0.08%	(3.17)**	-	(6.22)***
<i>N</i>	53	26		27		29		24	

\*\* *p* < .01

\*\*\* *p* < .001

Table 5 Corporate Governance Variables, Ranked by Regulatory Strictness

For a sample of completed bank mergers between 1996 and 2004 in Europe and the US, the table presents descriptive statistics for board variables by regulatory strictness (low, medium, high) of the bidding bank’s regulatory regime from Buch and DeLong (2008). *t*-Tests (two-sample Wilcoxon tests) which determine the statistical significance of differences in means (medians) are reported in parentheses.

Variable	N	Mean	P25	Median	P75	Min	Max
Panel A: Low Regulatory Strictness ( $3 \leq r \leq 4$ )							
Board independence	16	0.65	0.59	0.66	0.70	0.45	0.92
CEO / chair duality	16	0.38	0.00	0.00	1.00	0.00	1.00
Occupational diversity	16	0.50	0.42	0.49	0.55	0.39	0.68
Age diversity	16	7.46	6.30	8.15	8.49	5.08	8.57
Tenure diversity	16	1.73	1.12	1.57	2.08	1.02	3.00
Expertise diversity	16	0.99	0.73	1.01	1.27	0.63	1.27
Board size	16	17.19	15.00	18.00	20.00	12.00	21.00
CEO age	16	54.13	48.00	54.00	60.00	47.00	63.00
CEO tenure	16	5.00	3.00	4.50	5.00	1.00	13.00
Board activeness	16	7.60	7.00	7.50	8.00	4.00	11.00
Panel B: Medium Regulatory Strictness ( $5 \leq r \leq 7$ )							
Board independence	15	0.71	0.58	0.64	0.91	0.47	0.92
CEO / chair duality	15	1.00	1.00	1.00	1.00	1.00	1.00
Occupational diversity	15	0.52	0.48	0.48	0.58	0.34	0.69
Age diversity	15	7.56	5.78	7.03	8.84	5.26	10.16
Tenure diversity	15	1.48	1.31	1.51	1.70	0.86	2.01
Expertise diversity	15	1.36	1.11	1.02	1.61	1.05	1.61
Board size	15	15.33	11.00	15.00	19.00	10.00	25.00
CEO age	15	54.50	47.50	57.50	62.00	40.00	63.00
CEO tenure	15	4.67	3.00	6.00	6.00	1.00	7.00
Board activeness	15	11.71	8.00	14.00	15.00	7.00	15.00
Panel C: High Regulatory Strictness ( $8 \leq r \leq 9$ )							
Board independence	173	0.80	0.75	0.82	0.88	0.53	0.94
CEO / chair duality	173	0.37	0.00	0.00	1.00	0.00	1.00
Occupational diversity	173	0.54	0.45	0.56	0.64	0.00	0.76
Age diversity	173	8.53	6.74	8.16	10.14	3.71	16.09
Tenure diversity	173	1.39	1.10	1.28	1.47	0.73	4.69
Expertise diversity	173	1.78	0.47	1.38	0.96	0.20	2.27
Board size	173	15.40	12.00	15.00	19.00	6.00	31.00
CEO age	173	55.29	52.00	56.00	59.00	41.00	68.00
CEO tenure	173	11.18	6.00	11.00	15.00	1.00	31.00
Board activeness	173	9.02	6.00	8.00	12.00	4.00	18.00
Panel D: Difference: Low – High							
		mean	<i>t</i> -stat		median	<i>z</i> -stat	
Board independence		-0.15	(-6.27) ***		-0.16	(-4.92) ***	
CEO / chair duality		0.01	(0.04)		0.00	(0.04)	
Occupational diversity		-0.04	(-1.15)		-0.07	(-1.64)	
Age diversity		-1.07	(-1.08)		-0.01	(-0.86)	
Tenure diversity		0.34	(1.46)		0.29	(1.15)	
Expertise diversity		-0.79	(2.45) ***		-0.37	(1.84) +	
Board size		1.79	(2.42) **		3.00	(2.79) **	
CEO age		-1.16	(-0.82)		-2.00	(-0.72)	
CEO tenure		-6.18	(-3.33) **		-6.50	(-3.58) **	
Board activeness		-1.42	(-1.40)		-0.50	(-1.09)	

+ *p*, *z* < .10  
\*\* *p*, *z* < .01  
\*\*\* *p*, *z* < .001

**Table 6 CAR[-2, 2] and Board Governance around M&A Announcements**

The table reports least squares regressions for a sample of completed bank mergers between 1996 and 2004 in Europe and the US on cumulative announcement returns (CAR). CAR are based on standardized market model abnormal returns computed against a value-weighted bank sector index available on Datastream. Regulatory strictness ( $r$ ) is an index of regulatory strictness prevailing in the bidding bank's country from Buch and DeLong (2008). The cash-only dummy equals one if the transaction is completely cash-financed (and zero otherwise) and the product focus dummy equals one if the first two digits of the four-digit SIC code between bidder and target are identical (zero otherwise). Deal values are in millions of 2004-USD and the profitability of the target is measured as earnings per share (EPS) in the year before a deal was announced. Investor protection is an index of anti-director rights multiplied by an index of the quality of law enforcement (both from La Porta et al., 1998). Heteroskedasticity-robust standard errors are reported in parentheses.

	LESS STRICT Regulatory Regime ( $r < 9$ )						STRICT Regulatory Regime ( $r = 9$ )					
	(1)		(2)		(3)		(4)		(5)		(6)	
	Coeff	Std.err	Coeff	Std.err	Coeff	Std.err	Coeff	Std.err	Coeff	Std.err	Coeff	Std.err
Board independence	0.15	(0.42)	0.07	(0.42)	0.19	(0.44)	0.63*	(0.25)	0.65*	(0.26)	0.57*	(0.27)
Chair / CEO duality	-0.02	(0.20)	-0.10	(0.20)	-0.05	(0.20)	0.04	(0.17)	0.02	(0.17)	0.08	(0.18)
Occupational diversity	0.61	(0.76)	0.50	(0.77)	0.34	(0.80)	1.37*	(0.59)	1.25*	(0.57)	1.19*	(0.60)
Age diversity	0.00	(0.04)	0.02	(0.04)	0.01	(0.05)	0.00	(0.03)	0.01	(0.03)	0.02	(0.03)
Expertise diversity	-0.01	(0.08)	-0.07	(0.09)	-0.02	(0.10)	0.03	(0.07)	0.01	(0.07)	0.02	(0.07)
Log(board size)	-0.35	(0.30)	-0.35	(0.29)	-0.31	(0.31)	-0.09	(0.24)	-0.09	(0.24)	-0.07	(0.25)
Log(CEO age)	2.02	(2.06)	1.84	(2.05)	1.99	(2.12)	1.64*	(0.75)	1.57*	(0.76)	1.34*	(0.61)
Log(CEO tenure)	0.01	(0.11)	0.00	(0.11)	-0.04	(0.12)	-0.02	(0.09)	-0.04	(0.09)	-0.06	(0.09)
Log(board activity)	-0.34	(0.25)	-0.35	(0.25)	-0.19	(0.27)	-0.07	(0.19)	-0.10	(0.19)	-0.02	(0.21)
Cash finance			0.41*	(0.20)	0.37*	(0.15)			0.24*	(0.12)	0.13*	(0.07)
Product focus dummy			-0.22	(0.24)	-0.18	(0.26)			-0.13	(0.22)	-0.08	(0.24)
Log(deal value)					-0.07*	(0.04)					-0.06	(0.08)
Target profitability					0.04	(0.03)					0.04	(0.04)
Investor protection					0.02	(0.01)					0.02	(0.02)
Constant	-7.32*	(4.38)	-6.50	(4.35)	-7.92 <sup>†</sup>	(4.67)	-6.73 <sup>†</sup>	(3.55)	-6.23 <sup>†</sup>	(3.54)	-6.62	(4.08)
Observations	38		38		38		166		166		166	
Adj. R-squared (%)	3.24		3.62		9.05		8.60		13.50		16.10	

<sup>†</sup>  $p < .10$ 

\*  $p < .05$

Table 7 Board Characteristics and Industry-adjusted Operating Performance

The table reports least squares regressions for a sample of completed bank mergers between 1996 and 2004 in Europe and the US on bidders' industry-adjusted OPCFROA (operating cash flows divided by the book value of assets) from years -1 to year 3 following the completion of a bank merger. Regulatory strictness (*r*) is an index of regulatory strictness in the bidding bank's country from Buch and DeLong (2008). The cash-only dummy equals one if the transaction is completely cash-financed (and zero otherwise) and the product focus dummy equals one if the first two digits of the four-digit SIC code between bidder and target are identical (zero otherwise). Deal values are in millions of 2004-USD and the profitability of the target is measured as earnings per share (EPS) in the year before a deal was announced. Investor protection is an index of anti-director rights multiplied by an index of the quality of law enforcement (both from La Porta et al., 1998). Heteroskedasticity-robust standard errors are reported in parentheses

	LESS STRICT Regulatory Regime ( <i>r</i> <9)						STRICT Regulatory Regime ( <i>r</i> =9)					
	(1)		(2)		(3)		(4)		(5)		(6)	
	Coeff	Std.err	Coeff	Std.err	Coeff	Std.err	Coeff	Std.err	Coeff	Std.err	Coeff	Std.err
Board independence	-0.20	(0.40)	-0.19	(0.40)	-0.14	(0.41)	0.09	(0.35)	0.08	(0.36)	0.04	(0.35)
Chair / CEO duality	-0.03	(0.17)	-0.07	(0.17)	-0.15	(0.18)	-0.07	(0.13)	-0.10	(0.12)	-0.18	(0.13)
Occupational diversity	1.12	(0.83)	1.39	(0.86)	1.25	(0.87)	0.89	(0.64)	1.05	(0.74)	0.84	(0.82)
Age diversity	0.71	(0.76)	1.08	(0.83)	1.19	(0.86)	0.67	(0.84)	0.83	(0.89)	0.75	(0.85)
Expertise diversity	0.75	(0.46)	0.76	(0.46)	0.53	(0.40)	0.10**	(0.28)	0.10**	(0.29)	0.83*	(0.32)
Log(board size)	-0.20	(0.38)	-0.40	(0.41)	-0.24	(0.42)	0.10	(0.36)	0.00	(0.38)	0.01	(0.43)
Log(CEO age)	1.04	(0.96)	1.26	(0.98)	1.22	(0.98)	1.81*	(0.85)	1.87*	(0.85)	1.87*	(0.85)
Log(CEO tenure)	-0.06	(0.12)	-0.07	(0.12)	-0.09	(0.13)	-0.10	(0.16)	-0.11	(0.16)	-0.05	(0.15)
Log(board activity)	0.08	(0.23)	0.09	(0.23)	0.15	(0.24)	0.36*	(0.15)	0.35*	(0.17)	0.25*	(0.11)
Cash finance			0.06	(0.22)	0.19	(0.23)			0.03	(0.21)	0.07	(0.22)
Product focus dummy			-0.26	(0.22)	-0.43 <sup>+</sup>	(0.23)			-0.16	(0.18)	-0.23 <sup>+</sup>	(0.13)
Log(Deal value)					0.07	(0.08)					0.05	(0.09)
Target profitability					-0.04	(0.09)					0.00	(0.12)
Investor protection					0.02 <sup>+</sup>	(0.01)					0.02	(0.04)
Constant	4.81	(4.08)	5.53	(4.29)	6.88	(4.45)	6.36 <sup>+</sup>	(3.38)	7.07 <sup>+</sup>	(3.53)	9.57	(5.37)
Observations	29		29		29		108		108		108	
Adj. R-squared (%)	3.41		4.63		6.84		14.51		16.63		26.42	

<sup>+</sup> p <.10  
\*\* p <.01